

What is claimed is:

1. A component for use in a gas turbine engine comprising:

an airfoil portion having a trailing edge; and

means for maximizing thermal performance of said component by reducing a relative diffusion angle between an injected coolant flow and a streamline direction of a fluid passing over said airfoil portion.

2. A component according to claim 1, wherein said maximizing means comprises a non-linear array of teardrop shaped assemblies positioned adjacent said trailing edge and said teardrop shaped assemblies form a plurality of injection slots for injecting a fan shaped coolant flow into said fluid passing over said airfoil portion.

3. A component according to claim 2, wherein said non-linear array comprises an arcuate array of teardrop shaped assemblies.

4. A component according to claim 2, wherein each of said teardrop shaped assemblies has an arcuate leading edge, two flat portions adjacent said leading edge, and two angled portions connected to said flat portions and to each other.

5. A component according to claim 2, further comprising a coolant passageway having a plurality of coolant outlets formed by a plurality of spaced apart ribs.

6. A component according to claim 5, wherein each said teardrop shaped assembly has a central longitudinal axis and wherein said central longitudinal axis is aligned with an axis

of a respective coolant outlet formed by two of said spaced apart ribs.

7. A component according to claim 5, further comprising a pedestal array intermediate said coolant passageway and said trailing edge.

8. A component according to claim 7, wherein said pedestal array has a spanwise variable density.

9. A component according to claim 7, wherein each said coolant outlet is aligned with one of said pedestals in said pedestal array so that coolant fluid exiting said coolant outlet impinges on said one pedestal.

10. A component according to claim 7, wherein said pedestal array comprises a plurality of pedestals defining a plurality of fluid passageways which extend between said coolant outlets and said injection slots formed by said teardrop shaped assemblies.

11. A component according to claim 10, wherein each of said fluid passageways formed by said pedestal array is substantially aligned with a coolant injection slot formed by adjacent ones of said teardrop assemblies.

12. A component according to claim 10, wherein at least one of said plurality of pedestals in said pedestal array is aligned along an axis which coincides with a central longitudinal axis of a teardrop shaped assembly.

13. A component according to claim 10, wherein a plurality of said pedestals in said pedestal array is aligned along an axis

which coincides with a central longitudinal axis of a teardrop shaped assembly.

14. A component according to claim 1, wherein said trailing edge is non-linear.

15. A component according to claim 1, wherein said trailing edge is arcuately shaped.

16. A component according to claim 1, wherein said component is a blade for use in a gas turbine engine.

17. A component according to claim 1, wherein said component is a vane for use in a gas turbine engine.